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EXAMINER

KIANNI, KAVEH C

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 03/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/780,265

Applicant(s)

FUHRMANN, THOMAS

Examiner

Kevin C Kianni

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 10-21 is/are pending in the application.
- 4a) Of the above claim(s) 17-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 17-21 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. Newly submitted claims 17-21 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The independent claim 10, Group I, is directed to an exit slit for special wavelength selection of spatially separated wavelengths and that the exit slit is formed by an entering area of a first end of the light waveguide; while the independent claim 17, Group II, is directed to the exit slit that includes a light entering area through which the selected wavelength enters the fiber optic light waveguide and a slope area in which the light entering into the sloped area is diffracted away from the core of the fiber optical light waveguide; and while the independent claim 21, Group III, is directed to the exit slit that includes a light entering area through which the selected wavelength enters the fiber optic light waveguide and a vapor deposited opaque metal layer is formed around the entering area to block the specially separates light from entering into the fiber optic light waveguide. The inventions are distinct, each from the other because of the following reasons: Inventions I, II and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case invention II can be used as a filter in WDM system rather than a mere optical spectrometer in Group invention I or III.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 17-21 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### ***Claim Objections***

2. Claims 10 is objected to because of the following informalities: the limitation 'an exit slit for spatial wavelength selection of spatially separated wavelengths' is not referenced in any place in the specification. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or  
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4. Claims 10 and 15 are rejected under 35 U.S.C. 102(e) as being unpatentable by Waarts et al. (US 6081369).

Regarding claim 10, Waarts teaches an optical spectrometer (shown in fig. 14; also see col. 19, lines 19-56; wherein optical spectrum of input signals are

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measured/detected by detector 150 and current controller 152 for adjusting feedback/input current): comprising: an exit slit (see waveguide 146 in which its end slit(s) is shown at least in fig. 3, 4 and 14) for spatial wavelength selection of spatially separated wavelengths (see col. 19, lines 35), and a detector 150 for the light penetrating through the exit slit (shown in fig. 14, the detector 150 detects light output from front/back slit of waveguide 146), wherein the exit slit is formed by an entering area of a first end of the light waveguide (shown in fig. 14, in which the light is entering and exiting through waveguide 146 slits/openings), and the detector 150 is disposed at a second end of said light waveguide (shown in fig. 14, the detector 150 is located in the end side of the waveguide 146).

Regarding claim 15, Waarts further teaches wherein the entering area is at least as long as the core diameter of the light waveguide (see col. 7, lines 7-13; wherein the entering area /core diameter is  $10\mu\text{m}$  which is larger than the entering light diameter of about  $1\mu\text{m}$ , see col. 7, lines 40-41).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 11-13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over unpatentable over combination of Waarth et al. and Korn et al. (US 6304688).

Regarding claims 11-13 and 16, Waarth teaches all limitations of claim 10.

Waarth further teaches wherein waveguides sloped on lateral sides (see fig. 3, item sloped waveguide 73); the entering area is at least as long as the core diameter of the light waveguide (see col. 7, lines 7-13; wherein the entering area /core diameter is  $10\mu\text{m}$  which is larger than the entering light diameter of about  $1\mu\text{m}$ , see col. 7, lines 40-41).

However, Waarts does not teach specifically teach wherein the first end of the light waveguide is only sloped on both lateral sides of the entering area designed rectangularly such that light entering into the sloped surfaces is not further guided in the core of the light waveguide, and waveguide is symmetric with respect to an axis plane of the light waveguide. These limitations are taught by Koran. Koran teaches a waveguide (shown at least in figures 1 and 2) wherein the first end of the light waveguide 110 is only sloped on both lateral sides S1-2 of the entering area 112 designed rectangularly BL1-2 such that light entering into the sloped surfaces S1-2 is not further guided in the core of the light waveguide (see abstract), and waveguide 110 is symmetric with respect to an axis plane of the light waveguide (as shown in fig. 1-2). Thus, Koran provides coupling efficiency associated with the fiber tips while maintaining the ease of manufacture associated with the sloped fiber ends (see col. 1, lines 59-63). Thus, it would have been obvious to a person of ordinary skill in the art when the

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invention was made to modify Waart's spectrometer by replacing its waveguide 73 with that of Koran's double sided sloped waveguide 100/110 in order to produce a spectrometer that includes the above limitations, since the resultant optical system would enable injection of light into waveguides at desired level of power (see col. 2, lines 28-31).

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over unpatentable over combination of Waarth et al. and Korn et al. and further in view of Noell et al. (US 5966482).

Regarding claim 14, the combination of Waarth et al. and Korn teach all limitations that this claim depends on. However, the combination does not teach wherein the entering area is narrower than the core diameter of the light waveguide, and around the entering area a vapor deposited opaque metal layer is provided. This conventional limitation is taught by Noell (see col. 1, lines 14-19). Thus, Noell provides an optical fiber with low loss (col. 2, lines 37-38). Thus, it would have been obvious to a person of ordinary skill in the art when the invention was made to modify the combination of Waarth and Korn spectrometer by a vapor deposited opaque metal layer over waveguide 100/110 in order to produce a spectrometer that includes the above limitations, since the resultant optical system would enable injection of light into waveguides at desired level of power (see col. 2, lines 28-31).

***Response to Amendment***

8. Applicant's arguments filed on February 13, 2003 have been fully considered and the examiner has reexamined the amended claims accordingly.

This examiner has carefully reexamined claims 10-16 in view of applicant's amendments and arguments.

Regarding applicant's assertion (page 5, 4<sup>th</sup> parag.) that Waarts does not teach Optical spectrometer. The examiner responds that: (a) the limitation(s) of preamble is not weighed, especially when not supported in the rest of the limitations of the claim; (b) Waarts teaches wherein the spectrum of the light is detected/measured by the detector 150 and based on the detected/measured spectrum the current controller adjusts the amount of feedback/input current (see col. 19, lines 19-56).

In response to applicant's assertion (page 6, 1<sup>st</sup> parag.) that Waarts does not teach (a) vapor deposited opaque metal layer vapor deposited opaque metal layer and (b) aperture on the waveguide for reducing the beam cross-section at the end of waveguide. The examiner responds that the limitation (a) taught by Noell (see col. 1, lines 14-19) and the limitation (b) is not claimed in any of the above claims.

In response to applicant's assertion (page 7, 1<sup>st</sup> parag.) that Koren does not teach: (a) spectrometer and (b) wherein the first end of the light waveguide is only sloped on both lateral sides of the entering area designed rectangularly such that light entering into the sloped surfaces is not further guided in the core of the light waveguide. These limitations are taught by Koran. The examiner responds that the limitation (a) is discussed above; and with regard to limitation (9) Koran teaches a waveguide (shown at



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least in figures 1 and 2) wherein the first end of the light waveguide 110 is only sloped on both lateral sides S1-2 of the entering area 112 designed rectangularly BL1-2 such that light entering into the sloped surfaces S1-2 is not further guided in the core of the light waveguide (see abstract), and waveguide 110 is symmetric with respect to an axis plane of the light waveguide (as shown in fig. 1-2).

**THIS ACTION IS MADE FINAL**

9. This action in view of applicant's amendments made FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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**Contact Information**

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaveh Cyrus Kianni whose telephone number is (703) 308-1216.

The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached at (703) 308-4881.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

(703) 308-7722, (for formal communications intended for entry)

**or:**

(703) 308-7721, (for informal or draft communications, please label  
"PROPOSED" or "DRAFT")

Hand delivered responses should be brought to Crystal Plaza 4, 2021 South  
Clark Place, Arlington, VA., Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956.

Kevin Cyrus Kianni  
Patent Examiner  
Group Art Unit 2877



Frank Font  
Supervisory Patent Examiner  
Group Art Unit 2877

March 4, 2003